

## Thermo Scientific™ Richard-Allan Scientific™ Chromaview™ – Advanced Testing Mucicarmine Stain Instructions for Use

**For in vitro diagnostic use.  
For use as a kit in special stain techniques.**

### Technical Discussion

#### Microtomy

Cut sections at 4-6 microns.

#### Fixation

No special requirements; formalin fixation is adequate.

#### Quality Control

A section of colon, small intestine, or appendix should be used.

### Technical Procedure

#### Working Mucicarmine Solution

Mix one part Mucicarmine Stock Solution with four parts tap water. Solution will last up to 3-4 days if refrigerated at 2-8° C.

#### Working Weigert's Iron Hematoxylin

Mix equal quantities of Part A and Part B. Solution will last up to 10 days at room temperature.

#### Standard Staining Protocol

1. Deparaffinize and hydrate sections to deionized water.
2. Stain sections in Working Weigert's Iron Hematoxylin for 10 minutes at room temperature.
3. Rinse sections in deionized water until clear.
4. Stain sections in Working Mucicarmine Solution for 30 minutes. Check for staining results under microscope.
5. Rinse sections in deionized water for 1 minute.
6. Stain sections in Tartrazine Stain Solution for 5 dips.
7. Dehydrate sections in two changes of anhydrous alcohol for 10 dips each ensuring Tartrazine remains in section.
8. Clear sections in three changes of clearing reagent for 1 minute each and mount.

#### Microwave Staining Protocol

1. Deparaffinize and hydrate sections to deionized water.
2. Stain sections in Working Weigert's Iron Hematoxylin for 5-10 minutes at room temperature.
3. Rinse sections in deionized water until clear.
4. Place sections in 40 mL of Working Mucicarmine Solution in a plastic coplin jar with lid applied loosely. Microwave on high for 20-30 seconds; use caution not to boil. Let stand for 5 minutes.
5. Rinse sections in deionized water for 1 minute.
6. Stain sections in Tartrazine Stain Solution for 5 dips.
7. Dehydrate sections in two changes of anhydrous alcohol for 10 dips each ensuring Tartrazine remains in section.
8. Clear sections in three changes of clearing reagent for 1 minute each and mount.

### Results

Nuclei – Black to Blue  
Cryptococci Capsule – Red  
Mucin – Red  
Background - Yellow

### Discussion

Mucicarmine Stock Stain should be stored in a refrigerator at 2-8° C. The Mucicarmine staining reagents are for "In Vitro" use only. Refer to the Safety Data Sheet for Health and Safety information. All reagents are stable and should not form precipitants under ordinary storage parameters. The Working Mucicarmine Solution can be used for 3-4 days if refrigerated. The Tartrazine Stain Solution can be filtered and reused. Also, the Working Weigert's Iron Hematoxylin can be reused for up to 10 days, depending on the volume of slides. All dyes used in these formulations are certified by the Biological Stain Commission.

### Technical Comments

More intense staining is achieved with the room temperature procedure. Thermo Scientific Hematoxylin 1, Reorder No. 88018, can be used in place of Weigert's Iron Hematoxylin if lighter nuclear chromatin staining is desired. Caution should be taken if one attempts to microwave the Working Mucicarmine Solution because of the high alcohol content. The microwave protocol was developed using a 1200 watt microwave oven. Microwave oven frequencies vary from model to model. It may be necessary to adjust power levels or times to achieve desired results.

### Probable Mode of Action

Mucicarmine is used to demonstrate mucin from epithelia. Aluminum is thought to form a chelation complex that attaches the acid groups of mucin with the red dye in a dye-lake mechanism.

### References

1. Bancroft, J.D. and Stevens, A. Theory and Practice of Histological Techniques. Churchill Livingstone, New York, NY, 1977.
2. Sheehan, D.C. and Hrapchak, B.B. Theory and Practice of Histotechnology, 2nd Edition. Mosby, St. Louis, MO, 1980.
3. Thompson, C.C. Selected Histochemical and Histopathological Methods. Springfield, IL, 1966.
4. Lillie, R.D., H.J. Conn's Biological Stains. Williams & Wilkins, Baltimore, MD, 1972.
5. Carson, F. L. Histotechnology: A Self-Instructional Text, 2nd Edition. ASCP Press, Chicago, 1997.

### Order Information

Product	Size	Qty.	REF
Mucicarmine Kit	1 Kit	1	87012
Tartrazine Stain Solution	500 mL	1	88012
Weigert's Iron Hematoxylin – Part A	500 mL	1	88028
Weigert's Iron Hematoxylin – Part B	500 mL	1	88029
Mucicarmine Stock Solution	500 mL	1	88037

